Question:

What looks like a zebra mussel, occurs in Maryland waters, but isn't?

Answer:

The dark false mussel.

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

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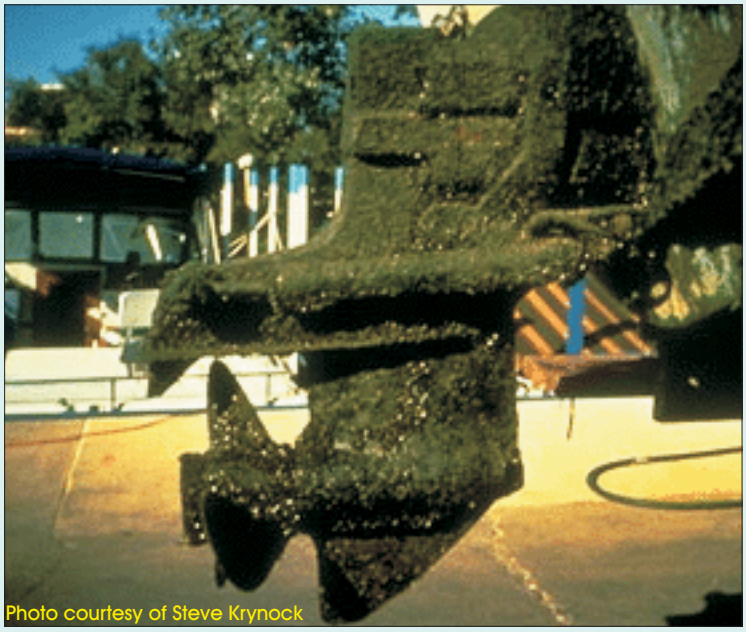
DNR biologists regularly receive phone calls or emails from alert citizens who believe they've found zebra mussels growing on bulkheads, pilings, docks, boat bottoms, and rocks in tidal creeks and embayments around Chesapeake Bay. Often these inquiries come in when a strong nor'easter blows down the Bay, water in the tidal creeks heads south, and large areas of substrate that would normally be submerged are exposed to view. So far, we have never received any calls about possible zebra mussel sightings in non-tidal waters. Over the past 10 or more years, we have investigated many alleged zebra mussel sightings in Maryland waters. But, thankfully, none of these sightings were confirmed to be zebra mussels (*Dreissena polymorpha*). After examining the mussel specimens spotted by the public, we've always been able to say, "No, they are definitely not zebra mussels" and everyone at DNR breathes a collective sigh of relief.



Zebra mussel infestations pose an ecological/economic threat to Maryland.

If not zebra mussels, what are they?

So far, all these sightings have been a small mussel species (*Mytilopsis leucophaeata*), commonly known as the dark false mussel or Conrad's false mussel or the platform mussel. Unlike the non-native and invasive zebra mussel, the dark false mussel is a native species found in brackish and tidal fresh areas along the east coast of the United States from New York to Florida. They are also found in Texas and Mexico.

Dark false mussels are not zebra mussels, but...

...the dark false mussel is similar to the zebra mussel in many ways: it is about the same size (adults are slightly larger than one's thumb nail), it attaches to hard surfaces using byssal threads, it grows in dense clumps, it has a free-swimming veliger larval stage, it is about the same yellowish to dark brown color, and it can have a striped shell. The salinity tolerances of the dark false mussel and zebra mussel overlap between 0.2 and 3.0 parts per thousand (ppt), with the dark false mussel being most abundant at salinities greater than 3 ppt and zebra mussels preferring freshwater areas.

How can you distinquish a dark false mussel from a zebra mussel?

If you find what look like zebra mussels in tidal waters where the salinities are typically higher than 2 or 3 ppt, odds are very high that you have dark false mussels. If the area is tidal but usually fresh water, what you found could be either species. Dark false mussels should not be found in non-tidal areas that may be suitable habitat for zebra mussels. There are two good diagnostic differences. Zebra mussels have a pointed umbone (small end of the shell)–see photo 1a—while dark false mussels have a more elongated shell with a rounded umbone—see photo 1b. However, the most reliable diagnostic feature is inside the shell. Pull the two halves of the shell apart, remove the tissue, and look closely at the inside of the shell at the small end. If you see a small triangular tooth (called an apophysis) that extends down—see photo 2a---you are holding a dark false mussel. Zebra mussels do not possess an apophysis inside their shells-----see photo 2b.

Reference: Pathy, D.A. and G.L. Mackie. 1993. Comparative shell morphology of *Dreissena polymorpha, Mytilopsis leucophaeata*, and the "quagga" mussel (Bivalvia: Dreissenidae) in North America. Canadian Journal of Zoology 71:1012-1023.

View inside the small end of a dark false mussel shell showing the small triangular tooth (the apophysis).

External and internal views of a dark false mussel shell showing the rounded umbone (small end of the shell).

View inside the small end of a zebra mussel shell showing the absence of an apophysis.

External and internal views of a zebra mussel shell showing the pointed umbone (small end of the shell).
Photographs by Walt Butler (MD DNR)

Do dark false mussels pose any ecological or economic threats in Maryland waters?

Because they are native to the east coast of North America and have been here for a long time, probably not. Whatever problems their dense colonies might cause in some areas of the State, the threat posed by zebra mussels is far greater. In the summer of 2004, very high abundance of dark false mussels in the Magothy River and other tidal tributaries to the Chesapeake Bay were accompanied by greatly increased water clarity.

We appreciate receiving calls from keen observers and we do our best to follow-up on each and every one. If you think you've found a zebra mussel colony in Maryland, collect at least 10-15 specimens, put them in a zip lock bag, and freeze them. Then call the Maryland Department of Natural Resources (Toll Free 1-877-620-8DNR ext. 3540 or 410-260-3540). TTY via Maryland Relay. We'll contact you and determine what species you have.